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December 2, 2003

Commissioner for Patents P.O. Box 1450 Alexandria, Virginia 22313-1450

Re:

U.S. Patent Application No.: 10/601020

For: NOVEL HEPATITIS C VIRUS PEPTIDES AND USES THEREOF

Inventors: Branch, Andrea D. et al.

Filed: June 20, 2003

Our Ref. No.: RII-003CPUSCN

Dear Sir:

I enclose herewith for filing in the above-identified application the following:

- 1. Information Disclosure Statement;
- 2. PTO Form 1449; and
- 3. A Return Postcard.

No additional costs are believed to be due in connection with the filing of this Information Disclosure Statement. However, please charge any necessary fees in connection with the enclosed statement to our Deposit Order Account No. 12-0080. For this purpose, a duplicate of this sheet is attached.

I hereby certify that this correspondence is deposited with the United States Postal Service as first class mail in an envelope addressed to: Commissioner for Patents, P.O. Box 1450, Alexandria, Virginia 22313-1450 on:

December 2, 2003

Date

Megan E. Williams, Esq., Reg. No. 43,270

Respectfully submitted,

LAHIVE & COCKFIELD, LLP

Megan E/Williams, Esq. Registration No. 43,270

Attorney for Applicants



### IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re the application of: Branch, Andrea D. et al.

Serial No.: 10/601020

Filed: June 20, 2003

For: NOVEL HEPATITIS C VIRUS PEPTIDES AND

**USES THEREOF** 

Attorney Docket No.: RII-003CPUSCN

Group Art Unit: 1648

Examiner: D. Wortman

Commissioner for Patents P.O. Box 1450 Alexandria, Virginia 22313-1450

## Certificate of First Class Mailing (37 CFR §1.8(a))

I hereby certify that this correspondence is being deposited with the United States Postal Service as first class mail in an envelope addressed to: Commissioner for Patents, P.O. Box 1450, Alexandria, Virginia 22313-1450 on the date set forth below.

December 2, 2003

Date of Signature and of Mail Deposit

By:

Megan E. Williams, Esq.

Registration No. 43,270 Attorney for Applicants

#### INFORMATION DISCLOSURE STATEMENT

Dear Sir:

For the Examiner's convenience in reviewing this continuation application, Applicants submit a consolidated PTO Form 1449, listing all references cited during the prosecution of the parent application. The present application is a Continuation of U.S. Serial No. 09/719277, filed April 13, 2001 (Atty. Docket No. RII-003CPUS). All references listed on the enclosed PTO Form 1449 have been previously cited by or submitted to the Office in the prior application, and, in accordance with 37 CFR §1.98(d), copies of the references are not enclosed but will be provided upon request.

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This statement is not to be interpreted as a representation that the cited publications are material, that an exhaustive search has been conducted, or that no other relevant information exists. Nor shall the citation of any publication herein be construed *per se* as a representation that such publication is prior art. Moreover, Applicants understand that the Examiner will make an independent evaluation of the cited publications.

Under 37 CFR § 1.97(b)(3), no additional costs are believed to be due in connection with the filing of this disclosure. <u>If, however, a first Office Action on the merits issues in this application bearing a mailing date prior to the date of this Information Disclosure Statement</u>, please charge the appropriate fee as required under 37 CFR §1.17(p) to our Deposit Order Account No. 12-0080.

Respectfully submitted, LAHIVE & COCKFIELD, LLP

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Megan E. Williams, Esq. Registration No. 43,270 Attorney for Applicants

28 State Street Boston, MA 02109 (617) 227-7400

Date: December 2, 2003

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RII-003CPUSCN 10/601020

APPLICANT

Branch, Andrea D. et al.

FILING DATE, GROUP

1648

IST OF PUBLICATIONS CITED BY APPLICANT (Use several sheets if necessary)

June 20, 2003

#### **U.S. PATENT DOCUMENTS**

EXAMINER INITIAL		DOCUMENT NUMBER	DATE	NAME	CLASS	SUBCLASS	FILING DATE IF APPROPRIATE
	A1	5,350,671	09/94	Houghton et al	435	5	
•	A2	5,443,965	08/95	Reyes et al	435	693	
	А3	5,728,520	03/98	Weiner <i>et al.</i> .	435	5	
	A4	5,840,839	11/98	Wang <i>et al</i>	530	325	
	A5	6,027,729	02/00	Houghton <i>et al.</i> .	424	228.1	-
	A6	6,054,264	04/00	Chien <i>et al.</i> .	435	5	
	Α7	6,074,846	06/00	Ralston <i>et al.</i> .	435	69.3	
	A8	6,150,087	11/00	Chien	435	5	
	A9	6,171,782	01/01	Houghton et al	435	5	

# **FOREIGN PATENT DOCUMENTS**

I		DOCUMENT NUMBER	DATE	Country	CLASS	SUBCLASS	TRANS	LATION
1							YES	NO
ı	A10	WO 94/25601 A2,A3	11/94	WO		·		
I	A11	WO 96/05315 A2,A3	02/96	wo				
١	A12	WO 96/40227 A1	12/96	WO				

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A13	Bullock, T.N.J. <i>et al.</i> . "Ribosomal scanning past the primary initiation codon as a mechanism for expression of CTL epitopes encoded in alternative reading frames," <i>J. Exp. Med.</i> , 184:1319-29 (1996).
A14	Feucht, HH. et al. "Study on Reliability of Commercially Available Hepatitis C Virus Antibody Tests" <i>Journal of Clinical Microbiology</i> 33(3):620-624 (March 1995).
A15	Ina, Y. et al. "Reduction of synonymous substitutions in the core protein gene of hepatitis C virus," J. Mol. Evol., 38:50-56 (1994).
A16	Lo, SY. et al. "Comparative studies of the core gene products of two different hepatitis C virus isolates: two alternative forms determined by a single amino acid substitution." <i>Virology</i> 199(1):124-31(1994 Feb. 15).
A17	Lo, SY. et al. "Differential subcellular localization of hepatitis C virus core gene products." - Virology 213(2):455-61(1995 Nov. 10).
A18	Lo, SY. et al. "Interaction between hepatitis C virus core protein and E1 envelope protein." J. Virol. 70(8):5177-82 (1996 Aug.).
A19	Malarkannan, S. et al. "Presentation of out-of-frame peptide/MHC class I complexes by a novel translation initiation mechanism." Immunity 10(6):681-90 (1999 Jun.).
A20	Ray, B.R <i>et al.</i> "Hepatitis C virus core protein cooperates with ras and transforms primary rat embryo fibroblasts to tumorigenic phenotype." <i>J. Virol.</i> 70(7):4438-43 (1996 Jul).

Examiner		Date Considered
*EXAMINER:	•	ot citation is in conformance with MPEP 609; Draw line through citation Include copy of this form with next communication to applicant.

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APPLICANT

Branch, Andrea D. et al.

1648

LIST OF PUBLICATIONS CITED BY APPLICANT (Use several sheets if necessary)

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OTHERS (including Author, Title, Date, Pertinent Pages, Etc.) **B1** Smith, D. B. et al. "Characteristics of nucleotide substitution in the hepatitis C virus genome; Constraints on sequence change in coding regions at both ends of the genome." J. Mol. Evol., 45:238-246 (1997) **B2** Valenzuela, P. et al. "The nucleotide sequence of the hepatitus B viral genome and the identification of the major viral genes." in Animal Virus Genetics, Academic Press, pp. 57-70 (1980).**B3** Varaklioti, A. et al. "Alternate translation occurs with the core coding region of the Hepatitis C viral genome." Journal of Biological Chemistry 277(20):17713-21 (2002). B4 Walewski, J.L. et al. "A western blot assay for detection of patient antibodies to an HCV alternate reading frame protein." Abstract in Hepatology 30(4):41A poster 163 (1999). **B**5 Walewski, J.L. et al. "HCV Patients Have Antibodies Against a Novel Protein Encoded in a Second Reading Frame." Hepatology 28(4, Pt. 2):278A, Abstr. 462 (October 1998). B6 Wang, J. et al. "Proteolytic conversion of hepatitis B virus e antigen precursor to end product occurs in a postendoplasmic reticulum compartment." J. Virol. 65:5080-83 (1991 Sep.). **B**7 Xu, Z. et al. "Synthesis of a novel hepatitis C virus protein by ribosomal frameshift." EMBO J. 20(14):3840-48 (2001).

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